

**Claims**

1. Method for detecting analytes comprising the  
5 following stages:
  - a) Incubation of a sample with macromolecules, to each of which at least 2 molecules of the analyte to be detected in the sample are coupled;
  - 10 b) Subsequent incubation of the sample with a solid carrier, to which capture molecules for the analyte to be detected are coupled;
  - c) Addition of a fluorescence dye to stain the macromolecules;
  - 15 d) Detection of the analytes present in the sample by excitation of the fluorescence dye.
2. Method according to claim 1 comprising, after stage c), a further stage c'): Removal of the  
20 non-bound fluorescence dye from the solid carrier.
3. Method for detecting analytes comprising the stages:
  - 25 a) Incubation of a sample with fluorescence-dye-marked macromolecules, to each of which at least 2 molecules of the analyte to be detected in the sample are coupled;
  - b) Subsequent incubation of the sample with a  
30 solid carrier, to which capture molecules for the analyte to be detected are coupled;
  - c) Detection of analytes present in the sample by excitation of the fluorescence dye.

4. Method according to claim 3 comprising, after stage a), a further stage a'): Removal of the non-bound macromolecules.
- 5 5. Method according to any one of the preceding claims, wherein the macromolecules are nucleic acids, peptide nucleic acids, polyamino acids.
6. Method according to any one of the preceding  
10 claims, wherein the macromolecules are single-strand oligonucleotides of a length within the range from 40 to 80 nucleotides.
7. Method according to any one of the preceding  
15 claims, wherein the macromolecules are identical or non-identical.
8. Method according to any one of the preceding claims, wherein the analytes have a molecular  
20 weight of less than 5000 Dalton.
9. Method according to any one of the preceding claims, wherein the fluorescence dye is selected from the group of phenanthrenes,  
25 acridines, SYBR dyes or fluorophores.
10. Method according to any one of the preceding claims, wherein the solid carrier is permeable to light and the detection method is  
30 implemented by means of a transmitted-light method.
11. Device for the implementation of the method according to any one of the preceding claims,

characterised in that a light source (6) is  
fitted on one side of a solid carrier (1)  
inserted into the device; that a filter ((5)  
and (8)) is disposed respectively between the  
5 light source (6) and the solid carrier (1),  
and on the other side of the solid carrier  
(1); and that the device is designed in such a  
manner that light passing through the solid  
carrier passes through an aperture into the  
10 human eye or into an optical instrument.